SG 715 Blanc / SD 7820

Can be applied with a brush or a spray gunCures at ambient temperature
Good thermal properties after curing: Tg1 max = 120°C (DSC)
Good resistance to abrasion
Recommended for building prototypes and scale models
Also exists in black

		SD 7820
Reactivity level		
Initial viscosity (mPa.s)	@ 20 °C	9000
	@ 30 °C	6400
Pot Life (150)	@ 20 °C	-
	@ 30 °C	-
Mixing ratio		
	By weight	100 / 23
	By volume	-
TG1 max onset	°C	120
Open time	@ 20 °C	02 h 00
	@ 25 °C	01 h 30
Overcoating mini time	@ 20 °C	02 h 50
	@ 25 °C	02 h 40
Overcoating maxi time	@ 20 °C	36 h 00
	@ 25 °C	24 h 00
Dust-free	@ 20 °C	03 h 45
	@ 25 °C	03 h 00
Hard to the touch	@ 20 °C	06 h 00
	@ 25 °C	04 h 00
Consumption (g/m²)	(g/m²)	500 - 1250
Hardness	(Shore)	88/ 87

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Epoxy resin SG 715 Blanc

Appearance		gel
Color		white
Viscosity (mPa.s)	@ 15 °C	49250 ± 9850
	@ 20 °C	32350 ± 6450
	@ 25 °C	24350 ± 4850
Density	@ 20 °C	1,1600
Storage (months)	@ Ta	24
Dry extract %		100

Hardener(s)

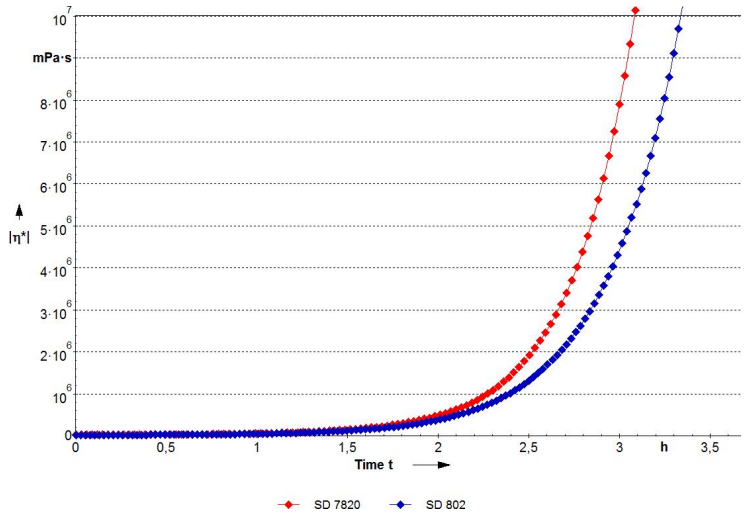
		SD 7820
Appearance		liquid
Color		colourless
Gardner color		≤ 1
Reactivity level		
Viscosity (mPa.s)	@ 15 °C	110 ± 20
	@ 20 °C	76 ± 16
	@ 25 °C	55 ± 10
	@ 30 °C	41 ± 8
Density	@ 20 °C	0,9600
Storage (months)	@ Ta	24
Dry extract %		

Mixe(s) SG 715 Blanc / SD 7820

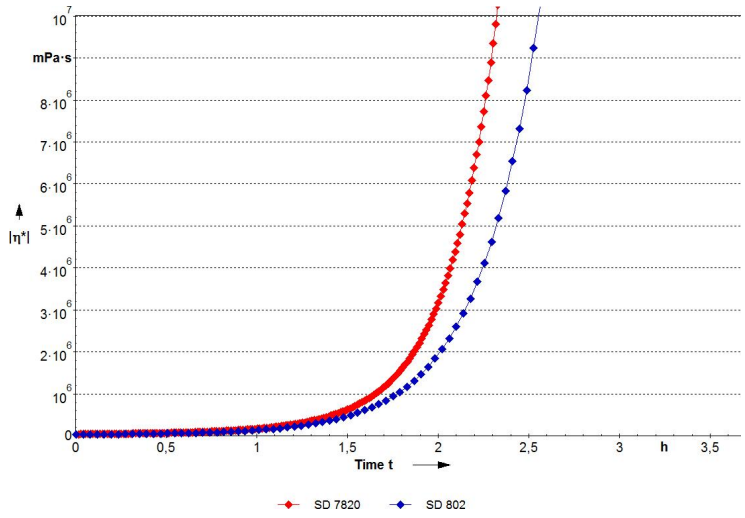
		SD 7820
Appearance		gel
Color		white
Mixing ratio		
By weight		100 / 23
By volume		-
Initial viscosity (mPa.s)	@ 20 °C	9000
PP 50 mm / 10 s^{-1}	@ 30 °C	6400
Density	@ 20 °C	1,3065
Consumption (g/m²)	(g/m²)	500 - 1250
Spread rate (g/m²)	(m²/kg)	0,8 - 2
Thickness (mm)	(mm)	0,4 -1,0

	SG 715 Blanc / SD 7820	
Substract temperature	20 °C	25 °C
Open time	02 h 00	01 h 30
Overcoating mini time	02 h 50	02 h 40
Dust-free	03 h 45	03 h 00
Gel time G'G"	04 h 00	03 h 30
Hard to the touch	06 h 00	04 h 00
Sandable	18 h 00	12 h 00

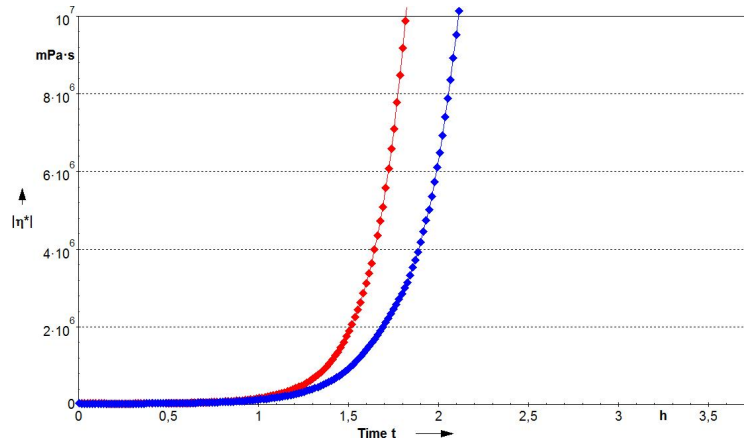
@ 20 °C


mPa·s
|η*|
Time t
h
SD 7820
SD 802

@ 25 °C


mPa·s
|η*|
Time t
h
SD 7820
SD 802

@ 30 °C


mPa·s
|η*|
Time t
h

Coating properties :

		SG 715 Blanc / SD 7820		
Curing cycles →		12h @ Ta + 24h @ 40 °C	12h @ Ta + 8h @ 60 °C +4h @ 80°C	
DSC glass transition				
TG1 onset	°C	74	103	103
TG1 max onset	°C		120	120
Hardness				
Shore D 0-15s		87 / 86	88/ 87	

Application

- **Ambient conditions**
  - Temperature: 18 ° C <Substrate temperature <50 ° C
  - Hygrometry <70%.

  High humidity can generate surface pollution harmful to the cohesion of gelcoat / laminate interface.

- **Release agent**

  Check by compatibility **SG 715** with a preliminary test (fish eyes, demoulding capacity ...).
  - **FK 1000 P** : Wax paste
  - **Cirex** : Semi-permanent liquid release agent

- **Recommended post-curing cycles**

  If possible, post-cure in the mold to limit the marking of the fibers.
  - 12 h at 20°C+ 24 h at 40°C
  - **or** 12 h à 20°C+ 8 h at 60°C

- **Roller or brush application**
  - Dilution possible up to 5% by weight of the mixture, i.e. 5 g of EP960 per 100 g of resin + hardener mixture.

- **Spraying**
  - Recommended equipment and parameters:
    - Gravity spraygun
    - Nozzles from 2 to 2.5
    - Pressure from 4 to 6 bars
  - After mixing, leave to mature for 5 minutes before diluting.
  - Dilute the mixture to a maximum of 20% of **EP 960** (depending on the temperature)
  - Apply in continuation, 40 cm from the support, avoiding overloading and spraying the product well to evaporate the diluent as much as possible.
  - Allow the gelcoat to gel before applying a possible second coat or laminating.

He must be tacky (still sticking on his finger) to avoid any risk of delamination.

If the gelcoat cannot be overcoated in time, it is possible to use a shrinking technique. This consists of depositing a fiber adapted to the surface of the amorous gelcoat so that it adheres to the gelcoat while presenting a dry surface which can be wetted by the laminating resin a few hours to a few days later (technique particularly suitable for implemented by infusion).
Contact our services to be advised on the fiber best suited to your application.

- **Cleaning**
  - Thinner EP 960, Methyl ethyl ketone (MEK), solvent for epoxy paints

Tests carried out on samples of pure cast resin, without prior degassing, between steel plates.

Measures undertaken according to the following norms:

Mechanical tests:	
Tension:	*NF EN ISO 527-2:2012*
Flexion:	*NF EN ISO 178:2011*
Compression:	*NF EN ISO 604:2004 or NF EN ISO 844:2014 (foam product)*
Charpy impact strength:	*NF EN ISO 179-1:2010*
Shear Strength:	*ASTM D732–17 (Punch Tool)*
Interlaminar shrinkage strength:	*ASTM D5528-13*
Toughness (GIC et KIC) :	*ISO 13586:2000*
Water absorption:	*Internal. Polymerization according to cycle, machining, weighing, time spent in distilled water at 70 °C / 48 hours, weighing 1 hour after emerging,*
Bonding Strength Double lap shear:	*ASTM D3528-96* *ADH = adhesive failure* *COH = cohesive failure* *TLC = thin-layer cohesive failure* *FT = fiber-tear failure.* *LFT = light-fiber-tear failure*
Thermal tests:	
Glass transition DSC:	*NF EN ISO 11357-2:2014 -5°C to 180 °C under nitrogen gas* *T_{G1} or Onset: 1st scan at 20 °C/min* *T_{G1} maximum or Onset: 2nd scan at 20 °C/min*
Glass transition DTMA:	*Temperature ramp 0 °C to 180 °C @ 2°C/min under normal atmosphere* *NF EN ISO 11357-1:2016 T_G onset G'* *ASTM D4065-12 T_G peak G"*

Physical tests:		
Gardner color:	*NF EN ISO 4630:2016*	*Visual method*
Refractive index:	*NF ISO 280:1999*	
Viscosity:	*NF EN ISO 3219:1994*	*Rheometer 50 mm, shear 10 s^{-1}*
Density on liquids:	*ISO 2811-1:2016*	*Pycnometer*
Density on solid:	*NF EN ISO 1183-3:1999*	*Helium Pycnometer*
Density on foam:	*NF EN ISO 845:2009*	
Gel time:	*Cross G' G"*	*Rheometer CP50 - Shear rate 10 s^{-1}*
Green Carbone content:	*ASTM D6866-16 or XP CEN/TS 16640 Avril 2014*	

TA:	*Ambient temperature (20 to 25 °C)*
NC:	*No information Communicated*
NB:	*No Breaking (maximum flexion deformation : 15 %)*

Table 1st page:

Pot Life:	*Time to reach 50 °C or time limit for use*
Gel time:	*Intersection of tangents on the viscosity curve of 1 mm thick layer*
Release time:	*Time required to obtain sufficient mechanical strength to release*
Minimum Vacuum Time:	*Time in which vacuum can be applied (25000 mPa.s)*
Maximum Vacuum time:	*Limit time below which a vacuum can be applied (G'G " crossing)*
Optimum Infusion time:	*Time to reach 400 mPa.s*
Max Infusion Time:	*Time to reach 25000 mPa.s*
Vacuum cut-off time:	*Time to reach G'G " crossover + 20%*